



SIXTH GRADE Learning Objectives for **Science**



INQUIRY PROCESS

The learner will

- ☑ follow and know the steps of the scientific process.
- ☑ plan and implement experimental investigations.
- ☑ ask well-defined questions.
- ☑ formulate testable hypotheses.
- ☑ collect information by observing and measuring.
- ☑ analyze and interpret information.
- ☑ neatly present and organize data.
- ☑ construct reasonable explanations.
- ☑ communicate conclusions in a variety of ways including: graphs, tables, charts and written reports.
- ☑ understand and use the terms: limitations, outliers, variables and methodology.

LIFE SCIENCE

Topic: Endangered Species and the Rainforest

The learner will

- ☑ know that living things are organized into groups based on their structures, behaviors and genetic code.
- ☑ understand that traits are passed from parent to offspring.
- ☑ understand that living things are classified into groups.
- ☑ identify the five kingdoms and the types of organisms in each kingdom; specifically focusing on plants and animals.
- ☑ describe how living things interact with each other and with their environment.
- ☑ understand that life evolves by natural selection.
- ☑ understand that species may become endangered by changes in their environment.
- ☑ understand what a rainforest biome consists of.
- ☑ understand how plants, animals and people interact with each other.
- ☑ become familiar with the indigenous peoples of the rainforest.
- ☑ analyze the ecological and environmental impacts of the destruction of the rainforest.
- ☑ create a graph comparing and contrasting rainforest rainfall to regional rainfall.
- ☑ create a graph comparing and contrasting rainforest temperature to regional temperatures.
- ☑ understand that increasing population impacts the natural resources of the earth.
- ☑ understand that populations consist of all individuals of a species that occur together at a given place.
- ☑ understand that all of the populations living together and the physical factors with which they interact compose an ecosystem.

PHYSICAL SCIENCE

Topic: Light, Sound and Electricity

The learner will

- ☑ know that light interacts with matter by transmission (including refraction), absorption or scattering (including reflection).
- ☑ know that white light and its component colors mix to form other colors and are reflected and absorbed by opaque objects.
- ☑ know that sound is caused by vibrations and can vary in pitch and volume.
- ☑ understand the properties of sound and the effect of electricity on sound.
- ☑ know how electric circuits control electrical devices we use every day.
- ☑ understand and be able to make series and parallel circuits.
- ☑ trace electricity from power plants to the home.
- ☑ know how electricity involves the movement of electrons.
- ☑ use vocabulary correctly when studying light, sound and electricity.



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EARTH SCIENCE

Topic: Earth's Processes

The learner will

- know that the Earth is composed of layers.
- understand the composition and characteristics of the various layers of the Earth.
- understand forces on the surface and within the earth, which cause it to change.
- know that forces within the Earth cause the crust to move.
- describe and visualize how earthquakes and volcanic activities change the surface landforms and features of Earth.
- graph earthquakes through history.
- understand how the earth has changed over billions of years.
- understand how mountains are formed.
- compile a mountain handbook filled with researched and given information on mountains.
- know that the atmosphere has different properties at different elevations.

Topic: Oceans

The learner will

- know and understand buoyancy, density, water pressure and salinity.
- draw a map of the ocean floor.
- know how the geo-sphere interacts, e.g., atmosphere, biosphere, lithosphere, hydrosphere
- understand and know the difference between tides and currents.
- know how a wave is formed.
- understand how the different ecotones adapt, e.g., rocky shore, sandy beach, marshes, estuaries
- research how people have developed technology to explore the ocean depths.
- know what happens to the ocean and the sea life because of pollution.
- know the zones of the shoreline (rocky) and the sea (from the surface to the abyss).
- describe the characteristics of life in different zones.
- classify mollusks based on appearance and using a shell guide.
- understand how biotic and abiotic conditions affect the populations of sea life.
- know that limitations of resources and other factors such as predation and climate limit the growth of populations in specific niches in the ecosystem.
- understand the role of predators in an ecosystem.

RESOURCES

Foss (Full Option Science System)-Landforms, Delta Education Publishing
Science Anytime, Harcourt Brace
Foss-Mixtures and Solutions
An Event-Based Science Module-Survive, Dale Seymour Publications